the eye was not compelled all the while to receive light rays from every direction when the only rays it wished to receive or needed were those that came from the wound itself. Under ordinary conditions, the eye might be considered as trying to keep out, by pupil contraction, all the extraneous light, and at the same time trying to let in, by pupil dilation, all it really wished to get from the wound; all of which was a definite over-strain of the accommodative and visual capacities of the eye, which would conduce certainly to nerve-fatigue and consequently to general fatigue. Indeed, it has not been uncommon in this and other hospitals to hear nurses who had to spend a good part of the day at their duties in the operating room, complain of the effects of the brilliant white environment.

I think we should have long ago learned this lesson in optics from our co-workers in the laboratories, for no one ever saw in a laboratory where the microscope was to be used, white tables, benches and shelving. On the contrary, these are stained a dead black; and in this connection it may be mentioned that some years ago Dr. George M. Gould, then of Philadelphia, suggested that newspapers should be printed in white letters on a black ground, for in the present printed page, with black letters on a white ground, we see the white ground but not the black letters, and we read really from the shadows of these letters, cast on the retina. On a black page with white letters we would see the letters and not the page, and while the effect, so far as understanding was concerned, would not be different, in the one we would be conserving eye-energy, whereas in the other we would be and are overworking the eye unnecessarily. The eye is a long-suffering organ, and we are conventional people, resistant to innovations, but whoever takes the trouble to study, either theoretically or practically, fatigue in its relation to efficiency, will learn that the conservation of energy, even in such matters as saving eye-work, where that is possible, is a valuable consideration, and those of us who have long and difficult operative procedures to do will find that this conservation may easily be a deciding factor in success or failure of fine manipulations.

We have tried to test light efficiency in the two kinds of rooms by a test-card such as is used by oculists, put into the bottom of a pasteboard box, which was lined with black. We found that it could be read, down to the smallest type, in either room, but it was plain that it was much more comfortable to read it in the green room, and that probably is the measure of the room's value—that you can work in it with much greater comfort than you could in a room where the optical conditions were more trying. The acme of discomfort would be, I should imagine, what I once saw in an Eastern hospital, where the operator was working in a brilliantly lighted, dead white room, and had to wear an electric headlight to over-illuminate his field, in order to see in spite of the glare. In the same room I provided myself with yellow spectacles to put on to protect myself from the discomfort of the light.

BLINDNESS FOLLOWING INJURIES TO THE BACK OF THE HEAD.

By L. NEWMARK, M. D., San Francisco Polyclinic.

Given a patient who has sustained an injury to the back of his head and is found to be deprived of his power of vision without showing any ocular changes: the physician will find in the following observations what he may expect in regard to the restoration of sight:

There is on record [1] the case of a boy, aged 12 years, who one morning at a quarter past eleven o'clock was run over by an automobile. He was immediately taken to a near-by hospital, where he revived after very brief unconsciousness and loudly lamented that he could not see. Between lambdion and external occipital protuberance there was a laceration, the periosteum was separated from the bone, but there was no fracture. There was total amaurosis, all sensibility to light was absent. The pupils, a little more than middling wide, reacted to light, but very sluggishly. The backgrounds were normal. By 2 p. m. he could already perceive large white objects, at 6 p. m. he could count fingers at a short distance. There was now found a right homonymous hemianopsia, the dividing line almost reaching the fixing point. Pupillary reaction had become prompt. There was an indication of amnesic aphasia. On the day following the accident the visual fields had extended toward the right, and in another day they had become normal. There was no diminution of visual acuity.

This was a very transient blindness. The boy's perturbation might have suggested traumatic hysteria, but the hemianopsia would seem to disprove that. It looks rather as if the visual centers in both occipital lobes had been affected, the right hemianopsia remaining for a while after the right occipital cortex had recovered. We will agree with the author in assuming a commotio cerebri, for the restoration of vision was too rapid for a hemorrhage.

In the following case a bilateral occipital hemorrhage appears to explain the blindness which ensued upon the trauma to the skull:

F. M., a youth of 21, was engaged on January 15, 1903, in a prizefight, which was terminated by a blow upon his jaw. He was thrown with great force upon the back of his head and the impact was so violent that it drew from the experienced referee the exclamation that it would prove fatal.

When I first saw him, eleven days afterward, there were the signs of a contusion on his occiput, but the surgeon had not discovered any fracture of the skull. The patient was passing urine and feces into the bed, and a decubitus was forming on the sacrum, but he was not unconscious, for, although he generally lay motionless, with his eyes closed, he could be roused by persistent calling, and would then give short, pertinent answers.

It could be made out that there was a reduction of motor power in the right extremities, but not in the face or tongue, and of sensibility throughout the right side, including astereognosis of the right hand; but the knee-jerks, heel-reflexes, and the reflexes of the upper limb were not livelier on the right than on the left side. There was a distinct Babinski extension sign in both feet. Hearing with the right ear was evidently affected, for he did not recognize the presence of a watch even

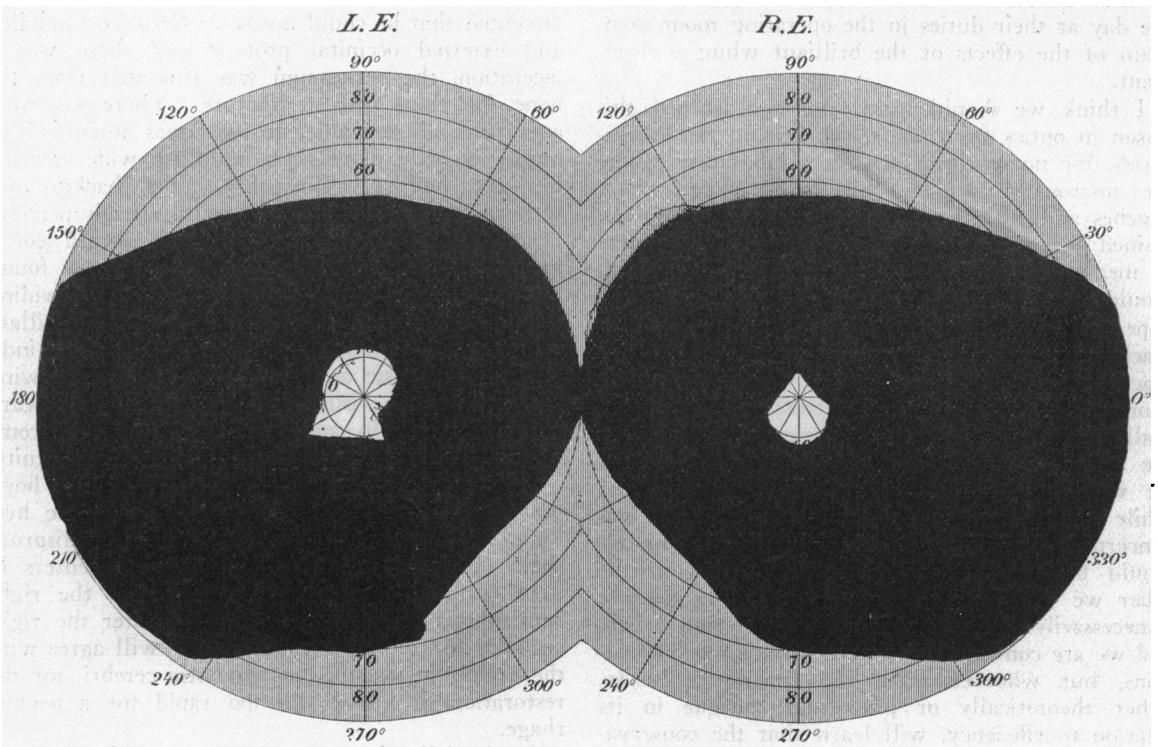
1. Camill Hirsch. Ueber passagere Blindheit durch Commotio cerebri. Deutsche Medizinische Wochenschrift, 1910, page 1436.

when it was in contact with that ear (which was not found to have been injured), while on the watch being applied to the other ear he would say he heard "the ticking of a clock."

What interests us now especially, however, is that he seemed to be blind. The sudden approach of a finger or other object to either eye never caused him to wink. When asked to recognize a face close before his he would ask "Where?" and fail to see it. When the light of a lamp was concentrated upon his pupils by means of a lens he gave no sign of perceiving it. In no part of the field could he be got to evince sight of any object, no matter how bright. And yet he persisted in saying that he could see. To the question, "Frank, can you see?" he regularly replied, "Of course I can see."

For reasons which it is unnecessary to set forth here we had no opportunity of testing the visual fields with the perimeter until the 24th of April. The diagrams made on that date by Dr. J. R. McMurdo show the small residual fields for white, and another set, the work of Dr. E. K. Hopkins, made in November of the same year, exhibit only a slight difference. Such tests as were made on one or two occasions some years later did not show a material widening of the fields.

Without entering into many interesting details which would not be relevant to the object just now in view, it remains to be said that the patient's memory suffered severely from the injury to his head. There was retrograde amnesia and for a considerable period an inability to retain new impressions even for an extremely brief time. The



FIELDS FOR WHITE OF F. M.

By February 9 he seemed able to distinguish movements of a hand, but when asked whether he could discern anything in the room he drew upon his imagination and answered "A kid" or "A man with a bicycle." Nine days after this there was the first demonstration of visual power exceeding the mere ability to distinguish light and darkness and to perceive the movements of an object: a watch being held before him, a little below the level of his eyes, he slowly made out that it was "twenty-eight minutes past ten,"—which was correct. It seemed clear now that he had good central vision, but only a very limited field.

On February 25 it was noted that at a distance of six feet he counted fingers correctly, and recognized and named a number of other objects successively held up before him. This naming of objects would suggest the absence of amnesic aphasia, but this aphasia was found to exist in regard to colors on March 5, when, although he could find the true appellation for "white," he could not find it for "red" or "blue," but showed his ability to distinguish colors by selecting the correct name from among several mentioned to him. Two weeks later, however, he had no difficulty in identifying colors and naming them. He read with ease. Throughout the whole period of observation there had been no changes in the ocular apparatus.

hearing returned early to the right ear, the right extremities regained their motor power, and there occurred gradually a not inconsiderable improvement in his memory; but the astereognosis of the right hand remained, associated with a similar disturbance in the foot, and the defects in the memory were never overcome sufficiently to make it trustworthy. He died in 1912 in consequence of an ulcer of the stomach, as I was informed. The information reached me too late to enable me to procure the brain.

From such a case as the foregoing the attendant upon a patient who is, or appears to be blind after an injury to his head which has not affected any part of the eyes will derive the hope of at least the restoration of central vision. What will naturally strike one is the patient's persistence in the denial of blindness when the observer cannot convince himself of the existence of sight. In cases of softening of both occipital lobes temporary amaurosis is commoner than permanent blindness; and these patients too may be as unconscious of their blindness as the patient just described. In some of them one will suspect that in a minute circle around the fixing point there remains sensibility to light.

In still another instance which I have observed of the effect upon the vision of a trauma to the back of the head the return of a useful degree of sight was delayed much longer than in the case which I have cited and the one I have described. We are again impressed by the patient's indifference to his blindness. He is a child who in October 1912, when he was a little over four years of age, fell from a moving vehicle. He suffered a fracture of the clavicle, had a large hematoma at the occiput, and remained unconscious for three days. The X-ray satisfied some of those who attended him of the presence of a fine linear fracture in the occipital bone, concerning which, I am informed, others were not free from doubt. When the child revived, he was found to be blind. The oculist who first examined him declares that the backgrounds of the eyes were normal. A number of observers who occupied themselves with the case during the six months following the accident could detect no evidence of vision, but the child never complained, and he displayed none of the timidity to be expected in those who walk in darkness. "He floundered about," says one who saw him in the earlier period of his blindness; "he went at things as if he did see them," says another who examined him later. The little fellow himself, when questioned about his perceptions, declared that he saw nothing. He knocked against things continually, or fell down stairs. But after the lapse of about six months he regained sight: how much, it has not yet been possible to determine accurately, for he cannot be induced to fix his gaze with sufficient steadiness to make a perimetric register possible. It is only his lack of understanding, proportionate to his years, and his playfulness which prevent precise examination, and as he is under the observation of a skilful ophthalmologist it is to be hoped that time will bring its opportunity for trustworthy results. That time will bring further change in his visual power I am disinclined to assume, for what has been restored seems not to have increased for some time past. His central vision seems to be good, but we think that the field is very narrow. If an object be placed upon the carpet, from the color of which its own color differs so little that it requires considerable visual acuteness to detect it, the boy will pounce upon it from a distance when it comes within his field; but in his search for it, as also for brighter objects, his periscopic efforts are abnormally prolonged.

There has been a divergence of opinion as to the nature of the visual trouble in this case. It has been already stated that the oculist who first observed the patient after the accident considered the discs normal, and that is the opinion of the oculist under whose care he is at present. Others declare, with more or less doubt, that the discs are atrophic; one expresses the view that there are atrophic changes in the discs, but that the loss of vision is not to be ascribed entirely to these, but in greater part to lesions in the optic pathway, and that the atrophy is a descending one. And, finally, the deprivation of vision has been interpreted as a symptom of traumatic hysteria.

My own judgment is that the blindness in this child was caused, like that in the other cases, by a traumatic affection of the occipital lobes, shock being assumed sufficient in the first patient and hemorrhage appearing more likely in the second and third. It is hoped that from this little group some practitioner, who may find himself in the presence of a case similar to those which compose it, may derive justification for relieving anxiety by a comparatively favorable prognosis.

RECOLLECTIONS OF THE LISTERIAN EPOCH.*

By CHARLES G. LEVISON, M. D., San Francisco Polyclinic.

The subject that I have chosen for my paper this evening is of perennial interest, for it has exercised an incalculable influence upon the evolution of modern medicine.

The name of Lister is so well known to the fraternity that it needs no introduction, but unfortunately this is not the case with the layman, who is quite uninformed regarding the remarkable achievements that have been accomplished in medicine, and it would seem an almost hopeless task to properly educate him. In this connection I have often, in conversation, inquired of people whether the name of Lister was known to them, and the response has almost invariably been returned: "Oh yes; he is the man that makes the Listerine." I repeated this to Sir Charles Ball when he was here delivering the Lane lectures a number of years ago, and he was very much amused. He laughed heartily and said that he was going to tell Sir Joe about it. At that time Lord Lister had not yet been elevated to the Peerage, which event took place in 1897 and it was the first time that any medical man had been so honored.

I have been particularly interested in Lister as a man as I had the privilege of knowing him personally. It was in the summer of 1892 while he was still teaching surgery in Kings College, London. One year later he retired from active work.

I visited him as a student and was received most graciously, and during the several times that I saw him he addressed his remarks particularly to me instead of to the students. He took me through the wards and he removed the dressings from the patients to demonstrate the action of the cyanide of mercury gauze that he had introduced into surgery a short time before. His modesty and simplicity were extreme and one would never have recognized him as one of the most important influences of all time. An example of his great modesty was shown at an International Medical Congress at which both he and Pasteur were present. In an address that he delivered, he stated that Pasteur was the only one that deserved any credit for the discoveries that he (Lister) had made.

An episode occurred some 12 years ago while I was visiting Dr. H. O. Marcy of Cambridge, Mass., and in my opinion it is of great interest. Marcy was the first to bring the antiseptic system to the United States and it is a commentary upon

* Read before the San Francisco County Medical Society, March, 1914.